UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,995	02/20/2002	Huizhao Wang	CISCP263/4714	1315

				EXAMINER
22434	7590	11/24/2006		RYMAN, DANIEL J

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ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 11/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/080,995	WANG ET AL.
	Examiner	Art Unit	
	Daniel J. Ryman	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>08 September 2006</u>.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>*1-17*</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>*1-17*</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments, see Response, filed 8 September 2006, with respect to the

rejection(s) of claim(s) 1-17 under 35 U.S.C. 102(e) as being anticipated by Inoue et al. (USPN

6,515,974) have been fully considered and are persuasive. Therefore, the rejection has been

withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view

of Heller (US 2002/0147837), Zhang (USPN 6,810,259), and Rai et al. (USPN 6,377,982).

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heller (US

2002/0147837) in view of Zhang (USPN 6,810,259) in further view of Rai et al. (USPN

6,377,982).

4.   Regarding claims 1 and 15-17, Heller discloses a method of and a first access point for

supporting mobility for a node that does not support Mobile IP (¶ 20, where Heller's invention

obviates the need for installing Mobile IP software on mobile nodes, such that the mobile nodes

do not support Mobile IP, by using base stations, i.e. access points, that support mobility for a

node, see also ¶¶ 16-17), the method comprising the steps of and the access point comprising

means for: enabling a third access point to determine whether to send a registration request on behalf of

the node using the gateway as the node's Home Agent (¶ 18, where a base station, i.e. an access

point, receives a link layer message, i.e. a data packet, which it uses to determine whether to send

a registration request on behalf of the node to the node's HA and where the HA is a gateway, as

shown in Fig. 3).

Heller does not expressly disclose receiving access point information from a second

access point; storing the access point information, the access point information including information

identifying an access point subnet and a gateway; and sending the access point information to a third

access point that supports Mobile IP to enable the third access point to perform the registration.

However, Heller does disclose that the third access point performs the registration using access point

information identifying an access point subnet and a gateway (¶ 29, where a base station, i.e. an

access point, performs registration on behalf of the node using a care-of-address, i.e. access point

subnet, and a HA address, i.e. a gateway as shown in Fig. 3). Heller also discloses that the third

access point retrieves address information from a database, although Heller fails to specify how the

database obtains this address information (¶ 18, were the access point "retrieves Mobile IP

information from a database based on the identity of the MN," including "an IP address for each

of the MN, FA and HA plus other information needed to perform the mobile IP registration.").

Zhang teaches, in a mobile communications network, receiving access point information from a

second access point at the first access point (col. 5, lines 13-21, where base stations, i.e. access

points, transfer location update information amongst the base stations, see also col. 1, lines 31-

43, where the location update information is information "necessary for executing call-

processing operations associated with the subscriber"); storing the access point information (col. 4,

line 65-col. 5, line 12, where the access point information is stored in the memory unit of the base

station); and sending the access point information to a third access point (col. 5, lines 13-21, where the

access point information will be transferred to another base station when the new base station needs the

information). Zhang's invention "provid[es] a location update protocol, which reduces the load on the

central server/database." Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to have the base stations of Heller perform the information transfer of Zhang by

receiving access point information from a second access point at the first access point; storing the

access point information; and sending the access point information to a third access point in order to

permit the third access point to obtain the address information required to perform registration in a

manner that reduces load on the central server/database used in a typical system.

Heller in view of Zhang does not expressly disclose enabling the third access point to compare

a received data packet with the access point subnet to determine whether to send a registration request on

behalf of the node. Rather Heller in view of Zhang seems to suggest that an access point will transmit a

registration request whenever an access point receives a link layer message from a mobile node

identifying itself (Heller: ¶ 18). In addition, Heller in view of Zhang discloses that a mobile node will

send to an access point a link layer message identifying itself regardless of whether or not the mobile

node currently has data to send, i.e. the mobile node will register with the access node when it is turned

on even if the mobile node currently is not engaged in a data call (Zhang: col. 2, lines 24-36). Rai

teaches, in a Mobile IP system, that the Mobile IP standard "requires that whenever an end system

changes the IP subnet to which it is attached, it sends a registration request message to a home agent in

its home subnet" (col. 41, lines 15-20). Therefore, it would have been obvious to one of ordinary skill

in the art at the time of the invention to have the access points of Heller in view of Zhang compare a

received data packet with an access point subnet to determine whether to send a registration request on

behalf of the node since this ensures that (1) the registration request is only sent when a data call is

entered into, i.e. registration requests are not send for mobile nodes which are engaged in wireless communication other than IP data calls, such as voice calls, and (2) that the registration request is only sent when the mobile node changes the IP subnet to which it is attached, such that registration requests are not attempted for mobile nodes that are still in the home subnet.

With respect to claim 17, Heller in view of Zhang in further view of Rai does not expressly disclose computer-readable instructions for implementing the method; however, Examiner takes official notice that it is well known in the art to use software to implement a method since software is more flexible than hardware. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method using software since software is more flexible than hardware.

5.   Regarding claim 2, Heller in view of Zhang in further view of Rai discloses that the first access point and the second access point support Mobile IP (Heller: ¶ 18, where all base stations in the system support Mobile IP, as demonstrated by the mobile being handed over from a base station that supports Mobile IP to a base station that supports Mobile IP).

6.   Regarding claim 3, Heller in view of Zhang in further view of Rai discloses that the first access point is responsible for sending the received access point information to one or more additional access points (Zhang: col. 5, lines 13-21, where the access point information will be transferred to another base station when the new base station needs the information).

7.   Regarding claim 4, Heller in view of Zhang in further view of Rai discloses that the first access point is responsible for sending the received access point information to one or more active access points (Zhang: col. 5, lines 13-21, where the access point information will be transferred to another base station when the new base station needs the information and where the new base station is active).

8.   Regarding claim 5, Heller in view of Zhang in further view of Rai discloses that the second

access point is an active access point (Zhang: col. 5, lines 13-21, where the access points are active

since they are engaged in calls).

9.   Regarding claim 6, Heller in view of Zhang in further view of Rai discloses that the third access

point is an active access point (Heller: ¶ 18, where the access points acting as proxies are engaged

in calls).

10.   Regarding claim 7, Heller in view of Zhang in further view of Rai discloses identifying the

third access point in a list of active access points that identifies one or more active access points prior to

sending the access point information to the third access point (Zhang: col. 5, lines 22-33, where base

stations have an associated mirror base station list, i.e. list of active access points, that identifies one or

more active base stations prior to sending the access point information to the third access point).

11.   Regarding claim 8, Heller in view of Zhang in further view of Rai suggests updating a list of

active access points to include the second access point, the list of active access points identifying one or

more active access points (Zhang: col. 5, lines 22-33, where presumably the mirror list changes with

the addition of new base stations and removal of old base stations).

12.   Regarding claim 9, Heller in view of Zhang in further view of Rai discloses that the list of

active access points comprises an IP address for each of the active access points (Zhang: col. 7, lines

45-46, where use of IP as the transport mechanism necessitates that the list will include the IP address

for each of the active access points).

13.   Regarding claim 10, Heller in view of Zhang in further view of Rai discloses at least one of the

processor or the memory being further adapted for sending access point information for one or more

additional access points to the second access point (Zhang: col. 5, lines 22-33, the access point sends

access point information to the access points listed in the active list), the access point information

including an access point subnet and a gateway (Heller: ¶ 29, where a base station, i.e. an access

point, performs registration on behalf of the node using a care-of-address, i.e. access point

subnet, and a HA address, i.e. a gateway as shown in Fig. 3).

14.   Regarding claim 11, Heller in view of Zhang in further view of Rai suggests that the access

point information further comprises at least one of a netmask and an IP address associated with the

second access point (Rai: col. 41, lines 15-20, where in order for a device to determine if the subnet has

changed, the device needs to have a subnet mask).

15.   Regarding claim 12, Heller in view of Zhang in further view of Rai suggests that storing the

access point information comprises: storing the access point information in a subnet mapping table

including a plurality of entries, each of the plurality of entries being associated with a different access

point (Zhang: col. 5, lines 22-33, where the access point information is stored in entries, i.e. mirror

cache entires, being associated with a different access point, i.e. associated mirror base stations).

16.   Regarding claim 13, Heller in view of Zhang in further view of Rai suggests at least one of the

processor or the memory being further adapted for deleting the access point information associated

with the second access point (Zhang: col. 5, lines 22-33, where presumably an access point that has

failed will be removed from the active list); and instructing the third access point to delete the access

point information associated with the second access point (Zhang: col. 5, lines 22-33, where the

exchange of information between the mirrored access points will presumably result in the first access

point instructing the third access point to delete access point information associated with the second

access point.

17.   Regarding claim 14, Heller in view of Zhang in further view of Rai suggests at least one of the processor or the memory being further adapted for removing an IP address associated with the second access point from a list of active access points (Zhang: col. 5, lines 22-33, where presumably an access point that has failed will be removed from the active list).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel J. Ryman
Examiner
Art Unit 2616